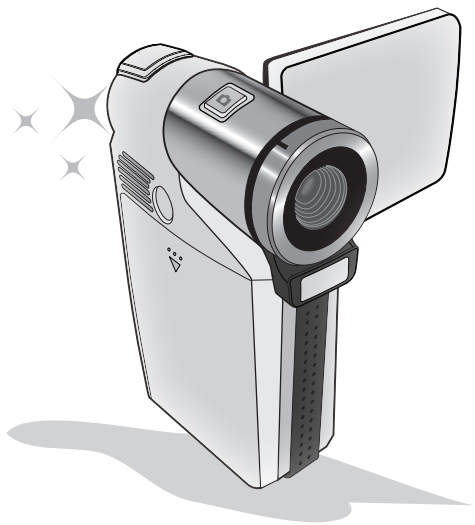# User's Manual

HD-DV Camcorder

Welcome:

Dear user, thank you for purchasing this product.
Much investment in time and effort has gone into its development, and it is our hope that it will give you many years of trouble-free service.

Safety Notice:

1. Do not drop, puncture or disassemble the camera; otherwise the warranty will be voided.
2. Avoid all contact with water, and dry hands before using.
3. Do not expose the camera to high temperature or leave it in direct sunlight. Doing so may damage the camera.
4. Use the camera with care. Avoid pressing hard on the camera body.
5. For your own safety, avoid using the camera when there is a storm or lightning.
6. Do not use batteries of different specifications. Doing so may lead to the potential for serious damage.
7. Remove the battery during long periods between usage, as a deteriorated battery may affect the functionality of the camera.
8. Remove the battery if it shows signs of leaking or distortion.
9. Use only the accessories supplied by the manufacturer.
10. Keep the camera out of the reach of infants.
11. Risk of explosion if battery is replaced by an incorrect type.
12. Dispose of used batteries according to the instructions.

FCC Compliance Statement:

This device complies with Part 15 of the FCC Rules. Operation is subjected to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Move the equipment away from the receiver.
-Plug the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/television technician for additional suggestions.

You are cautioned that any change or modifications to the equipment not expressly approved by the party responsible for compliance could void Your authority to operate such equipment.
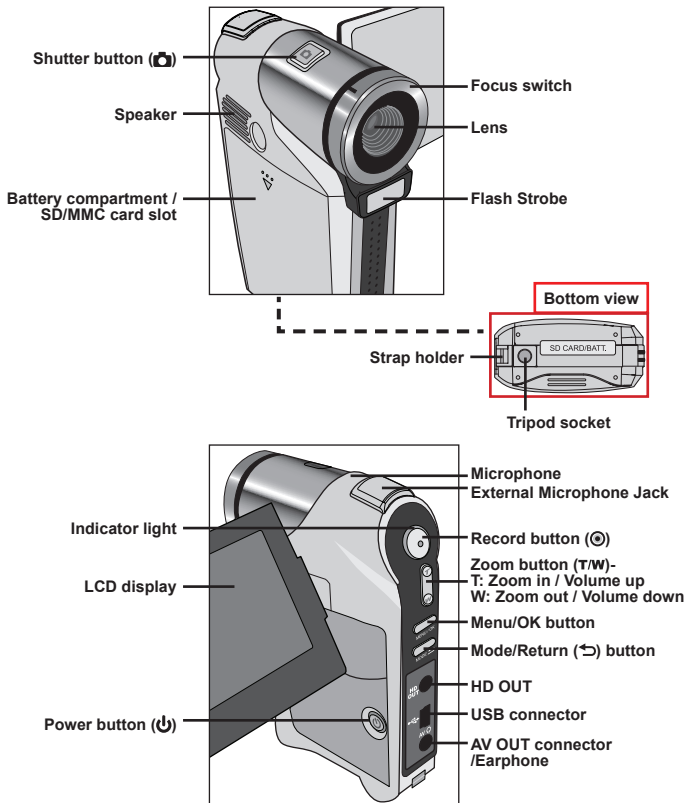
If the time arises to throw away your product, please recycle all the components possible.

Batteries and rechargeable batteries are not to be disposed in your domestic waste! Please recycle them at your local recycling point.

Together we can help to protect the environment.

Getting Started

● **Knowing your camcorder parts**

Shutter button (📷)

Focus switch

Speaker

Lens

Battery compartment /
SD/MMC card slot

Flash Strobe

Bottom view

SD CARD/BATT.

Strap holder

Tripod socket

Microphone
External Microphone Jack

Indicator light

Record button (◉)

Zoom button (T/W)-
T: Zoom in / Volume up
W: Zoom out / Volume down

LCD display

Menu/OK button

Mode/Return (↩) button

HD OUT

USB connector

Power button (⏻)

AV OUT connector
/Earphone

● Installing the battery

1. Slide the battery cover open.
2. Place the included Li-Ion battery into the compartment. Note that the metallic contacts must be aligned with the contacts in the compartment.
3. After the battery is properly installed, replace the battery cover.

● Charging the battery

Please charge the battery at least 8 hours prior to its first use.

1. Connect the cable.
   Connect one end of the supplied AC adapter to the USB port of the camcorder and the other end to a wall outlet.
   OR
   Connect one end of the supplied USB cable to the USB port of the camcorder and the other end to a powered PC. Make sure the camcorder is powered off.
2. The charging LED turns red and the charge starts.
3. When the charging is interrupted or the battery pack is fully charged, the charging LED will turn green.

> ● When using a PC to charge the battery, do not power on the camcorder, or the charge will stop.

● Inserting a memory card (optional)

To insert a memory card, do the following:
(1) Open the battery cover.
(2) Gently push the card as indicated until the card reaches the bottom of the slot.

To remove the memory card, gently push it down and it will pop up. Then pull the card out of the slot.

● Turning on/off your camcorder

Open the LCD monitor or press and hold down the Power button for 1 second to turn on the camcorder.
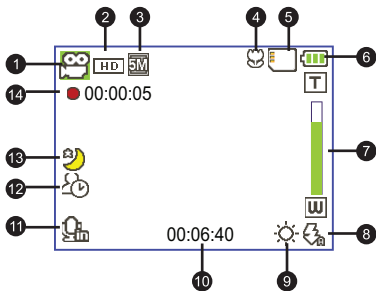
To turn off the camcorder, press and hold down the Power button for 1 ~ 3 seconds or close the LCD monitor.

> ● If the camcorder stays inactive for a long period of time, it may automatically shut down due to the Auto-Off setting.

Setting language

1. Power on the camcorder.
2. Press the **MODE** key to enter the **MODE** menu.
3. Use the **Zoom** button to select the **Setting** mode and press **OK** to enter the menu screen.
4. Use the **Zoom** button to select the **Language** item, and then Press **OK** to confirm.
5. Move the **Zoom** button up/down to select a language.
6. When done, press **OK** to confirm the setting.

Reading LCD indicators

1 Mode icon	**9** White Balance mode
2 Video resolution	**10** Remaining recordable time
3 Picture resolution	**11** External Microphone
4 Macro mode	**12** Selftimer mode
5 SD card inserted	**13** NightShot mode
6 Battery life	**14** Recording time
7 Zoom ratio indicator	
8 Flash mode	

❶ The LCD will display 4:3 ratio while QVGA video resolution is set. (Please refer to page 4 for more detailed instructions.)

Basic Operations

● **Recording a video clip / Taking a still picture**

1. Set the focus to an appropriate setting. Normally, you may set the focus to (🏔) for most filming conditions. Select (♥) only for close-ups.
   Note: Please make sure your memory card is inserted before recording.

2. Zooming:
   Move the Zoom button up or down to correspondingly zoom the screen in or out.

3. Press the **Record** button to start recording. Or press the **Shutter** button to take a still picture.

> ❶ Due to the sensor capture feature, the LCD preview and ratio of still picture capture will vary depending upon different video resolution settings.
> The image capture of the camera is set where as video resolutions are different.
>
> *** Please refer to the package printing for resolution specification.**
>
> | Video resolution | Preview | Taking pictures |
> |---|---|---|
> | HD 60f(1280x720) | 16:9 ratio | 4:3 ratio |
> | HD 30f(1280x720) | | |
> | WVGA 60f(848x480) | | |
> | QVGA 30f(320x240) | 4:3 ratio | 4:3 ratio |

4. Press the **Record** button again to stop recording.

   * The external microphone jack provides you with additional microphone options. When you insert an external microphone the (🎤) icon will appear in the lower left corner.

> ❶ The zoom function is also available during recording (except in macro mode).
> ❶ It's normal that the camcorder will feel slightly warm with continuous use / recording due to its high performance.

● Recording a voice clip

1. Power on the camcorder.

2. Press the **MODE** key to enter the **MODE** menu.

3. Use the **Zoom** button to select the **Voice Recorder** mode and press **OK** to enter the menu screen.

4. Press the **Record** button to start recording

5. Press the **Record** button again to stop recording.

   * The external microphone jack provides you with additional microphone options. When you insert an external microphone while in Voice Recorder mode, the ( ) icon will appear at the top of the screen.

● Playing back your recordings

1. Press the **MODE** button and use the **Zoom** button to switch to "**My Works**" mode.

2. There are three folders below **My Works: Video, Picture, and Voice**. Select Video, Picture or Voice, and then press the **OK** button to enter the index mode.

3. Operations in My Works mode:

File type	How to...	Action
Index mode Full-screen mode 	Shift between Index mode and Full-screen mode	In Index mode, press the **OK** button to switch to Full-screen mode. In Full-screen mode, press the **Mode/Return** button to switch to Index mode.
	Shift between files	1. In Index mode: Use the **Zoom** button to move the highlight box. 2. In Full-screen mode: Use the **Zoom** button to switch files.
Video & Audio	Start playing	When selected (in full-screen mode), the file automatically starts playing.
	Pause/Resume playing	During playing/While paused, press the **OK** button.
	Adjust the volume level	During playing, move the Zoom button up or down to adjust the volume accordingly.
	Stop playing	During playing, press the **Mode/Return** button.
	Select the next file	Return to previous view and use the **Zoom** button (W) to select the next file.
	Select the previous file	Return to previous view and use the **Zoom** button (T) to select the previous file.
Picture	Browse the picture	Use the **Zoom** button to browse the picture.

● Playing back your recordings on PC

▶ Installing software

Please notice that the recorded videos are .mov format. So you need some special programs to view the recordings on PC. For first time use, please make sure you have QuickTime 7.0 (or above) player on your PC. If not, please download the QuickTime player from the website. Or install the software on the bundled CD.
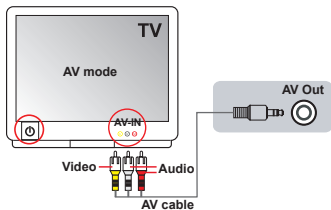
▶ Connecting to your PC and Saving files

1. Turn on the camcorder.
2. Connect the camcorder (with SD card inserted) to your computer with the USB cable.
3. A dialogue window will appear automatically. Please select the item "**Open folder to view files**" and click "**OK**".
4. If the dialogue window does not appear automatically, you may double click on "My computer" and open the "Removable Drive".
5. Double-click on the **DCIM** file folder.
6. Double-click on the **100MEDIA** file folder.
7. Copy the files you wish to keep and save them to the desired location on your computer.

● Connecting the camcorder to TV

▶ Connecting the camcorder to Standard TV
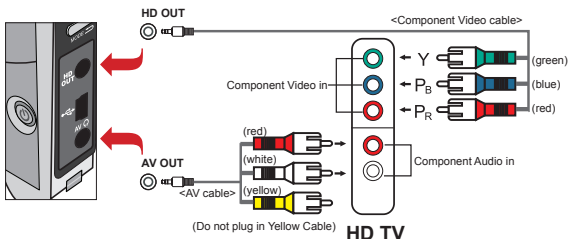
TV : Traditional CRT TV

1. Power on your TV and switch the TV to AV mode.
2. Connect the audio and video ends of the AV cable (yellow/white/red color) to the TV "AV-IN" jacks.
3. Power on the camcorder.
4. Connect the other end of the AV cable to the "AV out" port on your camcorder. When the pop-up message appears on the screen, please select "AV-Out".

▶ Connecting the camcorder to HDTV

HD TV hereby means the HDTV built-in component input ports, thus being able to perform HD high resolution quality while connected.

1. Turn on your HD TV.

2. Turn on the Camcorder.

3. Plug one end of the component video cable into the (Component Video IN) port on the HDTV and the other end into the (HD OUT) port on the Camcorder.

4. Plug one end of the other AV cable into the (Component Audio IN) port on the HDTV and the other end into the (AV OUT) port on the Camcorder. (Please do not plug in the yellow connector to HDTV's AV-IN.)

5. Press the input switch mode on HD TV and select "Component Input".

● Play MP3 music ✳

✳ **For select model only. Please refer to the package printing for detailed specifications.**

1. Turn on the camera, and connect the camera to a PC using the USB cable.

2. Copy files to the camera:
   After the camera is connected to the PC, double-click on "My Computer" and you will find a removable disk. Copy MP3 files into the "Music" folder for playing.

3. Press the Mode button and use the Direction buttons to select the Music Player mode. Then press the OK button to enter.

Advanced Operations

● **Menu operation**

The menu items provide several options for you to fine-tune your camera functions. The following table gives details on menu operations.

How to...	Action
Bring up the menu	Press the **MENU** button.
Move the highlight bar	Use the **Zoom** button to move up or down.
Enter sub-menu/Confirm an item	Press the **OK** button.
Exit menu/Go back to upper menu	Press the **Mode/Return** button (when in sub-menu).

● **Menu items in Camera mode**

Power-on → Press the **Menu** button.

Item	Option	Description
＊Video resolution	Please refer to the package printing for resolution specification.	
＊Picture resolution	Please refer to the package printing for resolution specification.	
NightShot	On/Off	Enabling this setting allows you to take a photograph with a dark background. Since the shutter speed will slow down when taking photographs at a dark place, we recommend using a tripod to eliminate blurring from hand shake. **Warning: Noise increases when NightShot is enabled.**
WB	Auto	The camera automatically adjusts white balance.
	Sunny	This setting is suitable for outdoor recording in sunny weather.
	Cloudy	This setting is suitable for recording in cloudy weather or shady environments.
	Fluorescent	This setting is suitable for indoor recording with fluorescent lamp lighting, or environments with high color temperature.
	Tungsten	This setting is suitable for indoor recording with incandescent lamp lighting, or environments with low color temperature.
Flashlight	On	The flash is forced to fire in every shot.
	Auto	The flash automatically fires when the lighting is insufficient.
	Off	The flash is disabled.

● Menu items in Camera mode (continued)

Item	Option	Description
Effect	Normal	Make recordings in natural color.
	B&W	Make recordings in black and white.
	Classic	Make recordings in sepia-toned color.
Exposure	-2~+2	Manually adjust the exposure to gain better effect when the preview image appears too bright or too dark. A positive value indicates the image will be brighter than usual; while a negative value makes the image dimmer.
Selftimer	On/Off	Enable/Disable the selftimer. After the selftimer is turned on, the camera will have ten seconds delay before recording when the Shutter button is pressed.
Histogram	On/Off	Enable/Disable image histogram display on the screen.
Icon	On/Off	Enable/Disable OSD (on screen display) icons to display on the screen.

● Menu items in My Works mode

Power-on → Press the **MODE** button → Use the **Zoom** button to switch to **My Works** mode → Select **Video, Picture** or **Voice** folder→ Press the **OK** button → Press the **Shutter** button.

Item	Option	Description
Delete One	Yes/No	Delete current file.
Delete All	Yes/No	Delete all pictures and video/audio files stored in the memory.
Slide Show/ Video Play	-	The camera displays images/video clips in sequence. You can press the OK button to stop the slide show/video play.
Lock	Yes/No	Single, multiple, or all files can be locked. A locked file cannot be erased by a delete function. However, the format function will erase all locked/unlocked files.

* If there are no files in the camera, no items will be seen.

● Menu items in Setting mode

Power-on → Press the **MODE** button → Select the **Setting** mode → Press the **OK** button.

Item	Option	Description
Date & Time	-	Set date and time.
Language	-	Lets you select the language used for OSD.
Beep	On	Enable beep sound.
	Shutter On	Disable beep sound, but keep Shutter sound.
	Off	Disable beep sound.
Start Image	On/Off	Sets the start image.
Icon	On/Off	Enable/Disable OSD icons to display on the screen.
LCD Bright	-2~+2	Set LCD brightness. A positive value makes the LCD brighter; while a negative value makes the LCD dimmer.
TV System	NTSC	Set TV system compatibility to NTSC. This option is suitable for America, Taiwan, Japan, and Korea areas.
	PAL	Set TV system compatibility to PAL. This option is suitable for Germany, England, Italy, Netherlands, China, Japan, and Hong Kong.
Flicker	50Hz	Set flicker frequency to 50Hz*.
	60Hz	Set flicker frequency to 60Hz*.
Auto Off	Off	Disable Auto-off function.
	1 min	The camera automatically shuts down when staying inactive for over 1 minute.
	3 min	The camera automatically shuts down when staying inactive for over 3 minutes.
	5 min	The camera automatically shuts down when staying inactive for over 5 minutes.
Format	Yes	Format the storage medium. Note that all files stored in the medium will be gone.
	No	Cancel action.
Reset Default	On	Restore factory defaults. Note that your current settings will be overridden.
	Off	Cancel action.

* Flicker settings table:

Region	England	Germany	France	Italy	Spain	Netherlands	Russia
Setting	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Region	Portugal	America	Taiwan	China	Japan	Korea	Thailand
Setting	50Hz	60Hz	60Hz	50Hz	50/60Hz	60Hz	50Hz

Appendix

● Battery Life Indicator

Icon	Description
	Full battery life
	Moderate battery life
	Low battery life * The flash strobe and the LED lights will be disabled.
	Empty battery life

Note: To avoid sudden outage of power supply, you are recommended to replace the battery when the icon indicates low battery life.

● Battery Life

Still picture	Video clip
Number of shots	Recording time (minute)
200	90
* shoot every 30 seconds ** flash is off *** resolution is set to 3M (2048x1536)	* resolution is set to HD 30f (1280x720)

Note: This table is for your reference only. The actual battery life depends on your battery type and recharge level.

Appendix

● Storage Capacity

* Please refer to the package printing for the specification of your model.

Memory	Video (min.)				Still picture		
	HD 60f	HD 30f	WVGA 60f	QVGA 30f	8M	5M	3M
SD card (1GB)	15	30	30	160	380	580	920
SD card (2GB)	30	60	60	320	770	1160	1840
SD card (4GB)	60	120	120	640	1540	2320	3680
SD card (8GB)	120	240	240	1280	3080	4640	7360

Note: The actual value of capacity may vary (up to ± 30%) depending on the color saturation and complexity of your subject and surroundings.

● System Requirements

QuickTime

* Please refer to the package printing for the specification of your model.

System requirements are different in different video resolution settings:

Video Resolution	PC system requirements
HD 60f (1280x720) @60fps	OS = Windows XP SP2, Vista or above CPU = Pentium 4 3.2GHz or above System RAM = 1GB (2GB recommended) Display card = 256MB of RAM
HD 30f (1280x720) @30fps	
WVGA 60f (848x480) @60fps	
QVGA 30f (320x240) @30fps	OS = Windows XP, Vista or above CPU = Pentium 4 1.5GHz or above System RAM = 256MB (512MB or above recommended) Display card = 64MB (128MB or above recommended)